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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/747,636	12/29/2003	Takayuki Tagawa	00650P0744US	5744

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EXAMINER

AN, SANG WOOK

ART UNIT PAPER NUMBER

1732

DATE MAILED: 03/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Am

Office Action Summary	Application No. 10/747,636	Applicant(s) TAGAWA ET AL.	
	Examiner Sang W. An	Art Unit 1732	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-39 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-39 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some c) ☒ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-10, 13-15, 22, 23, 26, 27, 29, 36, and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by Takehara et al (6177202).

Regarding claim 1 Takehara et al teach a method of manufacturing a power transmission belt comprising a body with a length and a cushion rubber layer in which at least one load carrying member is embedded so as to extend lengthwise of the body (abstract), said method comprising the steps of : extrusion molding (col 5 line 43) (a) a first rubber composition comprising rubber with short fibers (col 5 lines 1-3) therein and (b) a second rubber composition that is different than the first rubber composition to produce a first sheet in which the second rubber composition defines at least a part of the cushion rubber layer (Table 1); applying the at least one load carrying member to the second rubber composition to produce a preform assembly; and processing the preform assembly to produce a power transmission belt (col 6 lines 26-34).

Regarding claim 27, Takehara et al teach a method of manufacturing a rubber sheet to define at least a part of a compression rubber layer and cushion rubber layer in a power transmission belt (abstract), said method comprising the steps of : extrusion molding (a) a first rubber composition comprising rubber with short fibers therein (col 5

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lines 38-43) and (b) a second rubber composition that is different than the first rubber composition to produce a sheet (Table 1); said step of extrusion molding comprising (c) extrusion molding the first and second rubber compositions in a cylindrically-shaped mold with an inside peripheral surface and an outside peripheral surface between which a flow passage having a diameter is defined with an expansion portion with an inlet (col 6 lines 26-34 & col 8 lines 17-29) and a discharge port and in which the flow passage increases in diameter from the inlet towards the outlet so that the first and second rubber compositions are combined and the first rubber composition is at the inside peripheral surface and the second rubber composition is at the outside peripheral surface, and and second rubber compositions (col 6 lines 26-34) (d) cutting the combined extruded first discharged at the discharge port to configure the first and second combined rubber composition discharged at the discharge port into a sheet form (col 8 lines 26-29).

Regarding claims 2 and 28, Takehara et al teach that the step of extrusion molding a first rubber composition and a second rubber composition comprises extrusion molding a second rubber composition that has no short fibers herein (col 5 lines 1-3).

Regarding claim 3, Takehara et al teach that the cylindrically-shaped mold with an inside peripheral surface and an outside peripheral surface between which a flow passage having a diameter is defined with an expansion portion with an inlet and a discharge port and in which the flow passage increases in diameter from the inlet towards the discharge port and so that the first rubber composition is at the inside

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peripheral surface and the second rubber composition is at the outside peripheral surface (col 6 lines 26-34 & col 8 lines 17-29).

Regarding claim 4, Takehara et al teach that the step of applying the at least one load carrying member comprises wrapping the at least one load carrying member and the first sheet around a molding drum and against each other (col 6 lines 30-31).

Regarding claim 5, Takehara et al teach that the step of processing the preform assembly comprises grinding the body to define ribs extending lengthwise of the body (col 8 line 28).

Regarding claim 6, Takehara et al teach that the step of processing the preform assembly comprises applying at least one additional layer to the preform assembly (col 6 lines 27-28).

Regarding claim 7, Takehara et al teach that the step of applying at least one additional according to claim layer comprises applying a fabric layer to the preform assembly (col 6 lines 27-28).

Regarding claim 8, Takehara et al teach that the step of applying at least one additional layer comprises applying a rubber layer to the preform assembly (col 6 lines 26-34).

Regarding claim 9, Takehara et al teach that the steps of manufacturing a second sheet in substantially the same manner as the first sheet is manufactured and joining the first and second sheets to each other to produce a composite preform assembly (col 6 lines 26-34).

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Regarding claim 10, Takehara et al teach that the step of processing the preform assembly comprises processing the composite preform assembly by forming ribs in the body (col 8 line 28).

Regarding claim 13, Takehara et al teach that the step of applying the at least one load carrying member comprises applying the at least one load carrying member directly to the second rubber composition (col 6 lines 26-34).

Regarding claims 14 and 29, Takehara et al teach that the step of extrusion molding a first rubber composition and a second rubber composition comprises extruding the first rubber composition into a cylindrical shape with a peripheral inner surface and a peripheral outer surface and thereafter extruding the second rubber composition to cover the peripheral outer surface of the cylindrical shape defined by the first rubber composition to produce a composite cylindrical shape (col 6 lines 26-34 & col 8 lines 17-29).

Regarding claim 15, Takehara et al teach that the step of extrusion molding a first rubber composition and a second rubber composition comprises causing the composite cylindrical shape to be extruded through a flow passage in a cylindrically-shaped mold in an expansion portion of the flow passage having an inlet and a discharge port downstream of the inlet and wherein the flow passage is defined between an inside peripheral surface and an outside peripheral surface on the cylindrically-shaped mold and configured so that the diameter of the flow passage increases from the inlet towards the discharge port (col 6 lines 26-34 & col 8 lines 17-29).

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Regarding claims 22 and 36, Takehara et al teach that the step of kneading the first rubber composition before the first rubber composition is introduced to the inlet of the expansion portion of the flow passage (col 8 lines 11-15).

Regarding claims 23 and 37, Takehara et al teach that the step of kneading the first rubber composition comprises kneading the first rubber composition using an extrusion screw (col 5 line 43).

Regarding claim 26, Takehara et al teach that the step of processing the preform assembly comprises processing the preform assembly to produce one of a V-belt, a V-ribbed belt, and a double V-ribbed belt (fig 1).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. Claims 11 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al (6177202) in view of Thompson (GB 2154499A).

Regarding claim 11, Takehara et al teach everything in claim 1/9/10 but do not teach that the step of forming ribs in the body comprises forming ribs in each of the first and second sheets. However Thompson teaches first and second sheets having ribs (fig 2). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Thompson in Takehara et al's method of manufacturing a power transmission belt in order to produce a conveyor-type belt.

Regarding claim 12, Takehara et al teach grinding to form ribs but does not teach grinding the first rubber composition. However, Thompson teaches forming ribs on the first rubber composition (fig 2). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Thompson in Takehara et al's method of manufacturing a power transmission belt in order to produce a conveyor-type belt.

5. Claims 16-20, and 30-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al (6177202) in view of Wetzel et al (4395298).

Regarding claims 16 and 30, Wetzel et al teach that the step of extrusion molding a first rubber composition and a second rubber composition comprises simultaneously and continuously extruding the first and second rubber compositions through the flow passage (fig 4). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Wetzel et al in Takehara et al's method of manufacturing a power transmission belt in order to increase production.

Regarding claims 17 and 31, Takehara et al teach that the step of extrusion molding a first rubber composition and a second rubber composition comprises

introducing the first rubber composition into the flow passage at a first location and introducing the second rubber composition into the flow passage downstream from the first location at a second location (col 6 lines 26-34, examiner notes that the first and second terms do not specify any thing in specific and that wherever the first rubber composition flows out from could be called first location and wherever the second rubber composition flows out from the extruder could be called second location).

Regarding claims 18 and 32, Takehara et al teach that the flow passage has a radial thickness and the step of extrusion molding a first rubber composition and a second rubber composition comprises causing the first rubber composition to have a controlled first thickness between the first location and the second location and causing the thickness of the combined first composition and second composition in the flow passage to have a controlled second thickness that is greater than the first thickness between the second location and the discharge port (col 6 lines 26-34).

Regarding claims 19 and 33, Takehara et al teach that the flow step of introducing the first rubber composition comprises introducing the first rubber composition at the first location at the inlet to the expansion portion of the flow passage (col 6 line 29, examiner notes that the inlet of the mold or the outlet of the extruder is inherently an expansion portion of the flow passage).

Regarding claims 20 and 34, Takehara et al teach that the step of introducing the second rubber composition comprises introducing the second rubber composition at the second location downstream of the inlet for the expansion portion of the flow passage

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(col 6 line 32, examiner notes that the inlet of the mold or the outlet of the extruder is inherently an expansion portion of the flow passage).

7. Claims 21 and 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al (6177202) in view of Wetzel et al (4395298) and Hara et al (20040058767). Hara et al teach step of introducing the second rubber composition comprises introducing the second rubber composition at the second location adjacent to the discharge port (fig 8 24). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Hara et al in Takehara et al's method of manufacturing a power transmission belt in order to produce a ribbed transmission belt.

8. Claims 24, 25, 38, and 39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takehara et al (6177202) in view of Fischer et al (20050220919).

Regarding claims 24 and 38, Fischer et al teach that the step of passing the first rubber composition through a gear pump (par 0006). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Fischer et al in Takehara et al's method of manufacturing a power transmission belt in order to avoid long flow paths (par 0006).

Regarding claims 25 and 39, Fischer et al teach that the step of passing the first rubber composition through a gear pump comprises passing the first rubber composition through a gear pump between the extrusion screw and the inlet of the expansion portion of the flow passage (par 0006). Therefore it would have been obvious to one of ordinary skill in the art at the time of invention to use the teachings of Fischer et al in Takehara et

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al's method of manufacturing a power transmission belt in order to avoid long flow paths (par 0006).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sang W. An whose telephone number is (571) 272-1997. The examiner can normally be reached on Mon-Fri 7 AM - 3:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sang Wook An
Patent Examiner
Art Unit 1732
March 15, 2006


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